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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/871,775	06/01/2001	Bogdan Kosanovic	TI 32883	3244
23494	7590	09/16/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			VO, LILIAN	
			ART UNIT	PAPER NUMBER
			2127	

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/871,775	KOSANOVIC, BOGDAN	
	<b>Examiner</b>	<b>Art Unit</b>	
	Lilian Vo	2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 10 April 2002.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1 - 24 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1 - 24 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

1. Claims 1 – 24 are pending.

### ***Claim Rejections - 35 USC § 112***

2. Claims 5 – 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claim 5** recites the limitation “at least once communication channel”, page 3, and line 4. It is considered unclear. The examiner believes there is a typographical error and that it should be ‘at least one communication channel’. Appropriate clarification is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 – 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertazzi et al. (US 6,370,560, hereinafter Robertazzi).

5. Regarding **claim 1**, Robertazzi discloses a system for allocating processing resources to functions in a queue waiting to be executed, comprising:

a processor having a queue for holding a plurality of executable functions including (col. 5, lines 52 – 61):

a capacity determining means for determining an amount of the processing resources that are available to be assigned (col. 3, lines 1 – 8, col. 6, lines 18 – 36);

a load determining means for determining the processing resources that are needed to execute each function waiting in the queue (col. 3, lines 3 – 4, col. 6, lines 18 – 36);

an allocating means for allocating the processing resources to the functions based on a hierarchical priority scheme (col. 2, lines 52 – 62, col. 5, lines 51 – 60);

a measuring means connected to the processor for measuring an actual amount of the processing resources used (col. 4, lines 60 – 66, col. 7, lines 61 – 66, col. 15, lines 60 – 63);

a revising means for revising the estimate of the amount of processing resources needed to execute each function waiting in the queue based on the measured amount of the processing resources used (col. 9, lines 44 – 51, col. 11, lines 46 - 66); and

a reallocating means for reallocating the available amount of processing resources to the functions in accordance with the revised estimate and the hierarchical priority scheme (col. 2, lines 52 – 62, col. 5, lines 51 – 60, col. 9, lines 44 – 51, col. 11, lines 46 - 66).

Robertazzi however did not clearly disclose the amount of the use of estimating the amount of the resource needed. Nevertheless, it is well known to one of an ordinary skill in the art that the amount of resource needed can be estimated. It would have been obvious for one of an ordinary skill in the art, at the time the invention was made to include the feature of determining estimated values to the existing system of Robertazzi because this would increase the effectiveness and accuracy of the allocation and enhance overall planning of the resource.

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6. Regarding **claim 2**, Robertazzi further discloses:

a comparing means for comparing the sum of the measured amount of processing resources used to a high and a low threshold value (col. 11, lines 55 – 67);  
an alarming means interconnected with the processor for setting an alarm if the sum of the measured amount of processing resources used exceeds the high threshold value (col. 11, lines 55 – 67); and  
removing the alarm if the sum of the measured amount of processing resources used is less than the low threshold value (col. 11, lines 10 – 27).

7. Regarding **claim 3**, Robertazzi discloses:

a throttling means for assigning a resource throttling value to each function waiting in the queue to be executed when the alarm is set, wherein the throttling (reducing) value determines the reduction of the processing resources allocated to each of the functions (col. 9, lines 10 – 25).

8. Regarding **claim 4**, Robertazzi discloses:

a reducing means for reducing a number of instances for which a particular function may execute concurrently when the alarm is set (col. 11, lines 10 – 27 and 55 – 67).

9. Claims 5 – 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertazzi et al. (US 6,370,560, hereinafter Robertazzi) in view of Chau et al. (US 5,805,827, hereinafter Chau).

10. Regarding **claim 5**, Robertazzi discloses a system for allocating processing resources to functions in a queue waiting to be executed, comprising:

a capacity determining means for determining an amount of the processing resources that are available to be assigned (col. 3, lines 1 – 8, col. 6, lines 18 – 36);

a load determining means for determining the processing resources that are needed to execute each function waiting in the queue (col. 3, lines 3 – 4, col. 6, lines 18 – 36);

an allocating means for allocating the processing resources to the functions based on a hierarchical priority scheme (col. 2, lines 52 – 62, col. 5, lines 51 – 60);

a measuring means connected to the processor for measuring an actual amount of the processing resources used (col. 4, lines 60 – 66, col. 7, lines 61 – 66, col. 15, lines 60 – 63);

a revising means for revising the estimate of the amount of processing resources needed to execute each function waiting in the queue based on the measured amount of the processing resources used (col. 9, lines 44 – 51, col. 11, lines 46 - 66); and

a reallocating means for reallocating the available amount of processing resources to the functions in accordance with the revised estimate and the hierarchical priority scheme (col. 2, lines 52 – 62, col. 5, lines 51 – 60, col. 9, lines 44 – 51, col. 11, lines 46 - 66).

Robertazzi however did not clearly disclose the amount of the use of estimating the amount of the resource needed. Nevertheless, it is well known to one of an ordinary skill in the art that the amount of resource needed can be estimated. It would have been obvious for one of an ordinary skill in the art, at the time the invention was made to include the feature of determining estimated values to the existing system of Robertazzi because this would increase the effectiveness and accuracy of the allocation and enhance overall planning of the resource.

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Robertazzi however did not disclose the system with a processor having a communication port that connected to the communication channel. Nevertheless, Chau discloses a system with a processor having at least one communication port that connects to a communication channel (abstract and fig. 1). It would have been obvious for one of ordinary skill in the art, at the time the invention was made to implement Robertazzi's system with Chau's feature to better manage the utilization of processing resources to accomplish processing task on high bandwidth data channels, particularly in communication server which interface to several input/output ports.(Chau: col. 1, lines 43 – 47).

11. **Claims 6 – 9** are rejected on the same ground as stated in claims 2 – 5 above.

12. Regarding **claim 10**, Robertazzi discloses:

the functions are decomposed elements of a more complex process and do not require the same amount of resource to execute (col. 2, lines 52 – 62, and col. 1, line 64 – col. 2, line 9).

13. Regarding **claim 11**, Robertazzi did not disclose the multiple instances of any function within the process may be invoked by the processor to execute concurrently. However, it is well known in the art that multiple instances of any function within the process may be invoked by the processor to execute concurrently. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of invoking and concurrently executing multiple instances for functions to utilize the benefits of object oriented programming.

14. Regarding **claim 12**, Robertazzi discloses:

the processor assigns each of the functions a separate priority within the hierarchical priority scheme (col. 2, lines 52 – 62, col. 5, lines 50 – 60).

15. **Claim 13** is rejected on the same ground as stated in claims 11 and 12 above.

16. Regarding **claim 14**, Robertazzi discloses:

the processor assigns a resource throttling value to each function waiting in the queue to be executed, wherein the throttling value determines the reduction of the resource allocated to each of the functions (col. 9, lines 10 – 25).

17. Regarding **claim 15**, Robertazzi discloses:

the allocation of the available resource to the functions waiting in the queue by the processor is conducted to optimize the amount of the resource assigned to these functions (col. 5, lines 50 – 60, col. 9, lines 11 – 25).

18. **Claim 16** is rejected on the same ground as stated in claims 11 and 15 above.

19. **Claims 17 – 20** are rejected on the same ground as stated in claims 2 - 5 and 6 - 8 above.

### *Conclusion*

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Al-Hilali et al. (US 6,086,618) disclosed a method for estimating total resource usage

requirements for each transaction. Culbert (US 5,838,968) disclosed a method for dynamic resource management across tasks in real-time operating systems.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilian Vo whose telephone number is 571-272-3774. The examiner can normally be reached on Monday - Thursday, 7:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lilian Vo  
Examiner  
Art Unit 2127

lv  
September 10, 2004



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